

WHAT IS CLAIMED IS:

- 1 1. A container cap assembly for providing a closure for large mouth containers having male
threads surrounding an open end thereof comprising:
- a one piece integrally molded annular cap body formed symmetrically about
a longitudinal axis with a lower and upper section, the lower section having an outer
5 surface and an inner surface defining female threads thereon for cooperation with
matching threads on the container, the upper section forming an annular upwardly
extending flange;
- a one piece integrally molded lid member having a top surface, a bottom
surface and a downwardly extending flange;
- 10 a hinge pivotally connecting the lid member and the cap body whereby the lid
member is arranged to pivot between a closed position in which the opening in the
container is closed and an open position in which unobstructed access is provided
through the opening in the container, the flanges having interlocking sealing surface
in the closed position with the sealing surfaces of both flanges extending outwardly
15 at an acute angle to the vertical.
- 1 2. The container cap assembly of claim 1 wherein the sealing surfaces of the cap body and
lid member flanges are oriented at angles of θ and λ to the vertical, respectively.
- 1 3. The container cap assembly of claim 2 wherein $\theta \neq \lambda$.
- 1 4. The container cap assembly of claim 3 wherein θ and λ are within the ranges of about 8°
to 24° and 10° to 18° , respectively.

1 5. The container cap assembly of claim 4 wherein θ and λ are within the ranges of about 15°
to 21° and 12° to 16°, respectively.

1 6. The container cap assembly of claim 2 wherein the cap body and lid member are injection
molded from a plastic having a Rockwell R hardness.

1 7. The container cap assembly of claim 6 wherein the plastic has Rockwell R hardness of
about 80.

1 8. The container cap assembly of claim 3 wherein the difference between θ and λ is greater
than 2°.

1 9. The container cap assembly of claim 8 wherein θ is about 18° and λ is about 14°

1 10. The container cap assembly of claim 2 wherein the cap body and lid member are made
of polypropylene.

1 11. A container cap assembly for providing a closure for large mouth containers having
male threads surrounding an open end thereof comprising:

an annular cap body formed having a lower and upper section, the lower
section having an outer wall and an inner wall defining female threads for
5 cooperation with matching threads on the container, the upper section forming an
upwardly extending flange defining an exterior sealing surface which tapers
outwardly at an angle of θ with respect to the vertical in the unstressed condition of
the flange; and

a lid member pivotally hinged to the cap body whereby the lid member is
10 arranged to pivot to a closed position in which the opening in the container is closed
and an open position in which unobstructed access is provided through the opening

in the container, the lid member having a top and a bottom surface and a downwardly extending flange, the lid flange defining an interior sealing surface which tapers inwardly at an angle of λ with respect to the vertical in the unstressed condition of the lid flange, where $\theta \neq \lambda$, the lid flange being arranged to snap over the cap body flange to secure the lid member is in a closed position when the lid member is pressed downwardly with the sealing surfaces forming an interference fit to provide a liquid tight seal between the cap body and lid member.

12. The container cap assembly of claim 1 wherein each of the flange terminate in a free edge, the inner surface of the lid flange curving outwardly below the sealing surface thereof to engage the free edge of the cap body flange and flex said lid flange outwardly as the lid flange is snapped over the cap body flange.

13. The container cap assembly of claim 12 wherein $\theta > \lambda$

14. The container cap assembly of claim 13 wherein θ is within the range of about 8° to 24° and λ is within the range of about 10° to 18° .

15. The container cap assembly of claim 14 wherein θ is within the range of about 15° to 21° and λ is within the range of about 12° to 16° .

16. The container cap assembly of claim 15 wherein θ is about 18° and λ is about 14° .

17. The container cap assembly of claim 12 wherein the lid member is formed with a peripheral rim extending downwardly from the top surface and outwardly from the lid flange and further including a downwardly extending tongue formed integrally with the peripheral rim, the tongue terminating in an outwardly extending finger engaging portion to aid a user in opening the lid member.

1 18. The container cap assembly of claim 17 wherein the hinge is formed by a pair of space
axle stubs formed integrally with the lid member and opposite the tongue and a pair of upwardly
extending cooperating spaced slots in the cap body member, the spaced slots terminating in semi-
cylindrical bores for receiving the axle studs.

1 19. The container cap assembly of claim 18 wherein the slots have a slightly smaller width
than the diameter of the axle studs to allow the axle studs to be snapped into the cooperating bores
and wherein the axle studs are formed with an extension on one side thereof to provide a resistance
to the rotation of the lid member through a preselected angle so that once the lid is rotated through
5 said angle the lid will be held in an open position allowing unobstructed access to the opening in the
container.

1 20. The container cap assembly of claim 1 further including a releasable handle connected
to the cap body.